

AMENDED CLAIMS

received by the International Bureau on 21 December 2005 (21.12.2005). Original claims 16-26 have been replaced by amended claims 16-26 (3 pages).

at least one state maintaining element for maintaining an approximate state of the mixed-signal outputs upon power down or idle modes of the circuit;

5 circuitry to dynamically connect the at least one state maintaining element to the mixed-signal outputs determined to be outputting analog values.

16. The circuit of claim 14 wherein the circuitry for maintaining the approximate state of the mixed signal-outputs which maintains a reduced number of states from which the
10 entire approximate state can be deduced.

17. The circuit of claim 1 adapted to receive at least one control input, the circuit further comprising steering logic for directing signals received on the at least one control input to a subset of the driving elements that are
15 generating analog values.

18. The circuit of claim 1 further comprising a delay line comprising at least one delay element, wherein each mixed-signal output controls how much delay such elements introduce into the delay line.

20 19. The circuit of claim 1 further comprising an LC oscillator, wherein each mixed-signal output is used to tune capacitance of the LC oscillator.

20. A delay locked loop synchronization circuit comprising the circuit of claim 1.

25 21. A phase locked loop synchronization circuit comprising the circuit of claim 1.

22. A clock de-skew circuit comprising the circuit of claim 1.

23. A circuit implemented method comprising:

in a first control state, driving each of a set of mixed-signal outputs towards a respective off state sequentially from a first mixed signal output towards a last mixed-signal output such that any mixed-signal output that is
5 driven only partially towards its respective off state maintains an analog value; and

in a second control state, driving the mixed-signal outputs towards a respective on state sequentially from the last mixed-signal output towards the first mixed-signal output
10 such that any mixed-signal output that is driven only partially towards its respective on state maintains an analog value.

24. The circuit implemented method of claim 23 further comprising dynamically determining a subset of the set of mixed-signal outputs including at least those that are
15 outputting an analog value.

25. The circuit implemented method of claim 24 wherein dynamically determining which of the set of mixed-signal outputs are outputting an analog value comprises:

for each of at least one particular mixed-signal
20 output:

receiving at least one neighbouring mixed-signal outputs;

determining the mixed-signal output is analog if the neighbouring mixed-signal output(s) are consistent with the
25 particular mixed-signal output being an analog value for a mixed-signal thermometer code.

26. The circuit implemented method of claim 25 further comprising:

dynamically connecting at least one additional filter to the mixed-signal outputs that are outputting analog values.